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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,234	02/03/2006	Kenji Yoneda	43521-4200	2581
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SNELL & WILMER LLP (OC)			ZETTL, MARY E	
600 ANTON BOULEVARD			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,234	YONEDA ET AL.	
Examiner	Art Unit		
Mary Zettl	2875		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 February 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-17 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 03 February 2006 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>2/3/2006</u>	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1, 5-9, and 13 are objected to because of the following informalities:

Regarding claim 1, in line 7, the phrase, "to face to a work as being an object" is vague and grammatically incorrect.

Further regarding claim 1, it is unclear whether the "holding body" mentioned in line 7 is for holding the work or for holding the components that are inspecting the work.

Regarding claim 5, "light introducing end portions" lacks antecedent basis.

Regarding claim 6, in line 2, it appears that there is a spelling error with the word "binging."

Further regarding claim 6, starting in line 1 the phrase "each length of all or part of the optical fibers" is vague and indefinite.

Further regarding claim 6, in line 3, the phrase "to either one of directions" is grammatically incorrect.

Regarding claims 7 and 8, the use of the word "can" renders the claims vague and indefinite.

Regarding claim 9, in line 2 the phrase "is rotatably around" is grammatical incorrect.

Further regarding claim 9, in line 3, " the rotational angle" lacks antecedent basis.

Regarding claim 13, in line 7, it is unclear whether "the line" refers to "a line" mentioned in line 5 or "a straight line" mentioned in line 6.

Further regarding claim 13, the following lack antecedent basis, in line 8 "the light irradiating" and in line 11 "the work."

Further regarding claim 13, in line 18 an article appears to be missing in front of "directions."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 10, and 11, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Conzola et al. (US 5,185,638 A) in view of Miller (US 5,268,977 A).

Regarding claim 1, Conzola et al. teaches a line light irradiation device comprising: multiple light emitting parts each of which is provided with a light irradiating part where multiple optical fibers are thickly arranged in a line or in multiple lines with light leading out portions of the multiple optical fibers (25) forming a straight line (20; Figure 9) of a predetermined width, and a columnar lens (30 and 31) arranged to extend along a direction of the line in front of the light irradiating parts in pairs, and that irradiate line light that converges into a straight line; and a holding body (col. 8, lines 32-36) that

holds the light emitting parts so that each optical axis of the line light irradiated from each of the light emitting parts crosses on a predetermined straight line (Figures 8 and 9). Conzola et al. do not disclose expressly the details of the bracketing around the light source and as such do not disclose expressly a monitoring bore. Miller teaches a fiber optic luminaire (Abstract) including a monitoring bore arranged to penetrate (Figure 4; col. 3, lines 43-53). At the time the invention was made it would have been obvious to one of ordinary skill in the art to have included a monitoring bore such as that taught by Miller into the invention of Conzola so as to focus in on specific areas of the work piece.

Regarding claim 2, Conzola et al. teach each light emitting part being arranged on a holding body so that the optical axis of the light irradiated from each light emitting part is arranged radially viewed from the above-mentioned direction of the line (Figure 9).

Regarding claim 3, Conzola et al. teach each columnar lens being arranged generally on a straight line viewed from the above-mentioned direction of the line (see Figure 12, the pair of columnar lenses is arranged on a straight line: note the claim stipulates that **each** columnar lens is arranged on a straight line and does not stipulate that they are arranged on the same straight line).

Regarding claim 4, Conzola et al. teach a pair of pinching plates (i.e. opposite faces of item 20, Figure 10, making up pairs of plates), the pinching plates hold the light leading out end portions of the multiple fibers by pinching them.

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Regarding claim 5, Conzola et al. teach a binding part being formed by binding light introducing end portions of the optical fibers and light from a light source is introduced into the binding part.

Regarding claim 10, Conzola et al. teach the multiple light emitting parts being arranged serially along the above mentioned line (Figure 9).

Regarding claim 11, Conzola et al. teach each length of the light emitting part being identical (Figure 9).

3. Claims 6, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conzola et al. (US 5,185,638 A) and Miller (US 5,268,977 A) as applied to claim 1 above and further in view of Windross (US 5,222,794 A).

Conzola et al. appear to teach in Figure 10, varying lengths of optical fibers. Conzola et al. do not disclose expressly a binding part being located to deviate in a direction with respect to the center line of the light irradiating part. Windross teaches a fiber optic illuminating device including optical fibers (14; Figure 1) of various lengths and a binding (12) part that is located at a position that deviates from the center line of the light irradiating part. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Conzola et al. such that a binding part was located in a position that deviated from the center line of the light irradiating part as taught by Windross such that the space efficiency was taken into design considerations and so that the light source, being connected to the binding part is more readily accessible.

Regarding claim 13, Conzola et al. teach a line light irradiation device comprising: a light source (col. 8, line 27); multiple light emitting parts each of which is provided with a light irradiating part where multiple optical fibers (25) with light introducing end portion aligned with the light source are closely arranged in a line or in multiple lines with light leading out end portions of the multiple optical fibers forming a straight line of a predetermined width (Figures 10 and 12), a plurality of columnar lens (27; Figure 10), each arranged to extend along a direction of a line in front of each of the light irradiating parts, and each irradiating a respective line light to converge onto a straight line (Figure 8); a holding body (col. 8, lines 32-36) that is arranged to align with an object on which line light is to be irradiated, the holding body holding the light emitting parts so that each optical axis of the line light irradiated from each of the light emitting parts crosses at a predetermined straight line (figure 9). Conzola et al. do not disclose expressly the details of the bracketing around the light source and as such do not disclose expressly a monitoring bore. Miller teaches a fiber optic luminaire (Abstract) including a monitoring bore arranged to penetrate (Figure 4; col. 3, lines 43-53). At the time the invention was made it would have been obvious to one of ordinary skill in the art to have included a monitoring bore such as that taught by Miller into the invention of Conzola so as to focus in on specific areas of the work piece. Conzola et al. do not disclose expressly a binding part being located to deviate in a direction with respect to the center line of the light irradiating part. Windross teaches a fiber optic illuminating device including optical fibers (14; Figure 1) of various lengths and a binding (12) part that is located at a position that deviates from the center line of the light

irradiating part. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Conzola et al. such that a binding part was located in a position that deviated from the center line of the light irradiating part as taught by Windross such that the space efficiency was taken into design considerations and so that the light source, being connected to the binding part is more readily accessible.

Regarding claim 14, Conzola et al. do not disclose expressly the light source being a plurality of LEDs. It would have been obvious to one of ordinary skill in the art to have replaced the light source of Conzola et al. with LEDs since it is well known that LEDs are longer lasting, more rugged, and consume less power than alternative light sources.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Conzola et al. (US 5,185,638 A) and Miller (US 5,268,977 A) as applied to claim 1 above and further in view of Biard (US 5,148,303 A).

Regarding claim 7, Conzola et al. does not disclose expressly the light source being an LED. Biard et al. teach a fiber optic device utilizing LEDs. At the time the invention was made it would have been obvious to one of ordinary skill in the art to have modified the invention of Conzola et al. such that LEDs such as those taught by Biard were utilized since it is well known that LEDs consume less power, are longer lasting, and are more rugged than other light sources. Biard et al. further teaches using a power LEDs with current flow greater than or equal to 200mA. At the time the invention

was made, it would have been further obvious to one of ordinary skill in the art to have utilized a power LED such as that taught by Biard et al. in order to enhance the desired light output characteristics.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Conzola et al. (US 5,185,638 A) and Miller (US 5,268,977 A) as applied to claim 1 above and further in view of Marcus et al. (US 5,596,409 A).

Regarding claim 8, Conzola et al. do not disclose expressly the irradiation device having the capability of varying the distance between the light irradiating part and the columnar lens. Marcus et al. teach a device for measuring physical properties of an object, the device including a lens and optical fibers; wherein the distance between the lens and the optical fibers is variable (col. 19, lines 14-27). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Conzola et al. such that the distance between the optical fibers and the lens is variable in order to increase the range of object feature sizes and the size of the surface area that is analyzed.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Conzola et al. (US 5,185,638 A) and Miller (US 5,268,977 A) as applied to claim 1 above and further in view of Wack et al. (US 6,782,337 B2).

Regarding claim 9, Conzola et al. appears to illustrate (Figure 9) means for rotating the device, however does not discuss such means expressly. Wack et al.

teach a device for monitoring defects including a light source that rotates around a rotational axis (col. 37, lines 40-45). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Conzola et al. such that the light source was rotatable as taught by Wack et al. as a means for detecting more defects by providing more viewing angles.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Conzola et al. (US 5,185,638 A) and Miller (US 5,268,977 A) as applied to claim 1 above and further in view of Poffenbarger (US 5,953,113 A).

Regarding claim 12, Conzola et al. does not disclose expressly a light source being arranged for each of the light irradiating parts individually. Poffenbarger teaches a device for detecting defects including fiber optics with individual LEDs (col. 3, lines 54-56). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Poffenbarger such that individual light sources were provided as taught by Poffenbarger in order to increase the brightness of output illumination.

8. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conzola et al. (US 5,185,638 A).

Regarding claim 15, Conzola discloses a lighting device for inspecting a surface, comprising: a holding body (col. 8, lines 32-36); and a plurality of light emitting parts (optical fibers; 25), each including a first member and a second member (light receiving

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and light emitting sides of optical fibers), a light source (7) mounted to the holding body and a bundle of optical fibers are mounted on the holding body adjacent the light source, the optical fibers are spread into a linear array and fastened between the first member and the second member within the holding body to receive light from the light source (Figures 10 and 12). Conzola et al. does not disclose expressly the light source being removable, however it would have been obvious to one of ordinary skill in the art to have made the light source removable in order to extend the life span of the inspection device beyond the life span of a single light source.

Regarding claim 16, Conzola et al. teach a cylindrical rod lens (Figure 11; col. 8, line 55) aligned with the light emitting ends of the optical fibers to form the line of light on the predetermined surface.

Regarding claim 17, Conzola et al. do not disclose expressly the light source being a plurality of LEDs. It would have been obvious to one of ordinary skill in the art to have replaced the light source of Conzola et al. with LEDs since it is well known that LEDs are longer lasting, more rugged, and consume less power than alternative light sources.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Zettl whose telephone number is 571-272-6007. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandy O'Shea can be reached on 571-272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MZ

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